

8/7/2018

**Additional Suggestions**

**(b) (5)**

Person	Decision
Richard Franklin	implement ask facilities
Ken Duncan Don Redman	Implement if there is a large source or accumulation of BOD and TSS; no for continuous HC monitoring No for quarterly monitoring - maintain monthly
Brian Crossley, Spokane Tribe	implement after talking with Grand Coulee and Brian Nickel
Jenny (note to self)	Done in Lower Columbia - do in rest.

Project	Project-specific Notes for Permit Consideration	Interested Tribes	Ecology Regional Contact
Grand Coulee	(b) (5) Includes Oil Accountability Program; fish anesthetizing	Colville, Kalispel, Spokane	
Lower Granite	Includes Oil Accountability Program; fish anesthetizing: nav lock pump		
Little Goose	History of oil spill issues with SPCC program; Includes Oil Accountability Program; fish anesthetizing	Nez Perce Umatilla, Yakama	
Lower Monumental Ice Harbor	Nav lock sump pump	Nez Perce Umatilla, Yakama Nez Perce Umatilla, Yakama	
McNary	Nav lock sump pump	Umatilla, Yakama, Warm Springs, Grand Ronde, Cowtitz	
John Day	Nav lock sump pump	Umatilla, Yakama, Warm Springs, Grand Ronde, Cowtitz	
The Dalles	Remove outfalls 20, 21, 24, 25; add Outfall 35	Umatilla, Yakama, Warm Springs, Grand Ronde, Cowtitz	
Bonneville	Add unbuilt OWS - due in 2020	Umatilla, Yakama, Warm Springs, Grand Ronde, Cowtitz	

**Other Notes**

Heard back from Todd Thorn at Colville; wants pre-draft permit for comment; 8/9 email

info coming from biologists on CWIS structure

Advanced CWIS that deflects fish; daily inspection

<b>Changes to permit from idaho</b>	<b>Permit</b>	<b>Fact Sheet</b>	<b>help needed</b>
1/maintenance event - change to monthly or continuous for sumps	X	X	
nav lock description		X	
anesthetizing ponds	X	X	
Includes HC continuous monitoring		X	
Moved BMP req from permit to Appendix	X		
Changed eff table format to be consistent with template	X	X	
<b>Addition of outfalls - supplemental info from Corps</b>	<b>Project</b>	<b>Outfalls</b>	<b>Description</b>
	John Day	024, 025	CNO Overflor Pumps
	Dalles		35 Auxiliary Water
	Lower Granite*		13 Anesthetizing tanks
	Grand Coulee	add outfalls	Main Unit cooling water for third, right and left pumphouses, unwatering sump, line service cooling water
<b>Deletion of outfalls - supplemental info from Corps</b>	<b>Project</b>	<b>Outfalls</b>	
	John Day		26 Spillway drainage sump pumps
	Dalles	20, 21, 24, 25	Transformer cooling water
	Lower Monumental	12, 13	Anesthetizing tanks
	Little Goose		16 Juvenile Fish facility discharge
	Lower Granite*	12, 13	Anesthetizing tanks and juvenile fish facility discharges

  

<b>Additional Work</b>	
Processing HC data	X
BE evaluation	
Anti-degradation evaluation	X
Presentation for tribes	X
Presentation for federal caucus	X

Bonneville		Need info on	XL spreadsheet with data sets; fish ladder info - operations and monitoring 23 outfalls grouped in sumps, non-contact cooling water, fish units				
WA0026778		Summary Level of difficulty	Conversion from GPM to MGC average-high			0.00144	
		2 powerhouses - Powerhouse 1 in Oregon; Violations	none for pH				
				#NAME?			
Agency	Contact	Outfall #	Outfall description	Pollutants Detected	Notes	ID permit effluent category	
						Bigger outfalls than the Dalles; Powerhouse 2 - each unit has 2 submersible screens intakes - constant maintenance - fisheries inspect daily; screens are at an angle - deflects them; juveniles	
USACE, Portland	Ken Duncan	1	<b>Fish Unit #2 Non-contact cooling water</b>	oil and grease, TSS, TOC	23 outfalls are in Washington	cooling water	1.152
		2	<b>Fish Unit #1 Non-contact cooling water</b>	TSS, TOC,		cooling water	1.152
		3	CAC2		HVAC chiller	cooling water	1.872
		4a	MU18 Non-Contact Cooling Water	TSS, TOC,		cooling water	0.936
		4b	MU 18 Thrust Bearing Cooling Water	TSS, TOC,		cooling water	1.008
		5a	MU17 Non-Contact Cooling Water	TSS, TOC, ammonia		cooling water	0.936
		5b	MU 17 Thrust Bearing Cooling Water	TSS, TOC		cooling water	1.008
		6a	MU16 Non-Contact Cooling Water	TOC		cooling water	0.936
		6b	MU 16 Thrust Bearing Cooling Water	BOD, TOC		cooling water	1.008
		7a	MU15 Non-Contact Cooling Water	TSS, TOC		cooling water	0.936
		7b	MU 15 Thrust Bearing Cooling Water	TSS, TOC		cooling water	1.008
		8a	MU14 Non-Contact Cooling Water	BOD, TSS, TOC		cooling water	0.936
		8b	MU 14 Thrust Bearing Cooling Water	BOD, TSS, TOC		cooling water	1.008
		9a	MU13 Non-Contact Cooling Water	TSS, TOC		cooling water	0.936
		9b	MU 13 Thrust Bearing Cooling Water	BOD, TSS, TOC		cooling water	1.008
		10a	MU12 Non-Contact Cooling Water	TSS, TOC		cooling water	0.936
		10b	MU 12 Thrust Bearing Cooling Water	TSS, TOC		cooling water	1.008
		11a	MU11 Non-Contact Cooling Water	none		cooling water	0.936
		11b	MU 11 Thrust Bearing Cooling Water	none		cooling water	1.008
					Oil water separator discharge wastewater from the three transformer secondary		
		12	OWS	TSS		equipment and floor drain discharges, maintenance; 137,000 gallons; lar	0.864
		13	CAC1	TSS, TOC	HVAC chiller	cooling water	1.872
		14	Unwatering Sump	TSS		equipment and floor drain dis/HC meter on this; no cooling water	10.08
						HC meter on this, no cooling water; Main Sump - continuous HC monitoring and monthly TSS monitoring	
		15	Drainage Sump	TSS, TOC		includes fish ladder - check out conditions equipment and floor drain dis	4.32
		average min max					average min max

Sum of cooling water

21.6

Max Daily Values and Average daily values are identical

	Temp	pH	BOD	TSS conc	COD	TOC	Ammonia	Oil/GreasePCB						
influent	21.5	8.05	ND	6 ND		1.7	0.2	MD	0.07		ND		1.7	0.2

BOD mass BOD conc TSS mass TSS conc Fecal massFecal conc TRC mass TRC conc Oil and GrnOil and Grn COD mass COD conc TOC mass TOC conc Ammonia Ammonia Discharge pH Winter terSummer Temp

0 nd	41.31	4.3 NA	NA	NA	NA	0 nd	0 nd	14.41	1.5	0 nd	800	7.9 empty	23.8	
0 nd	317.05	33 NA	NA	NA	NA	0 nd	0 nd	14.41	1.5	0 nd	800	8.1 empty	24.3	
0 nd	202.96	13 NA	NA	NA	NA	0 nd	0 nd	23.42	1.5	0 nd	1300	8.1 empty	22.2	
0 nd	14.83	1.9 NA	NA	NA	NA	0 nd	0 nd	11.71	1.5	0 nd	650	8.1 empty	22.7	
0 nd	27.74	3.3 NA	NA	NA	NA	0 nd	0 nd	12.61	1.5	2.44	0.29	700	8.1 empty	22.6
0 nd	14.05	1.8 NA	NA	NA	NA	0 nd	0 nd	11.71	1.5	0 nd	650	8	21.8	
0 nd	12.61	1.5 NA	NA	NA	NA	0 nd	0 nd	11.7	1.4	0 nd	700	8	21.8	
0 nd	0 nd	NA	NA	NA	NA	0 nd	0 nd	13.27	1.7	0 nd	650	8.1	16.6	
19.34	2.3	0 nd	NA	NA	NA	0 nd	0 nd	19.34	2.3	0 nd	700	8	15.4	
0 nd	31.22	4 NA	NA	NA	NA	0 nd	0 nd	13.27	1.7	0 nd	650	8.1	22.7	
0 nd	11.77	1.4 NA	NA	NA	NA	0 nd	0 nd	12.61	1.5	0 nd	700	8.1	22.3	
15.61	2	14.05	1.8 NA	NA	NA	0 nd	0 nd	14.05	1.8	0 nd	650	8.1	23.1	
31.1	3.7	11.77	1.4 NA	NA	NA	0 nd	0 nd	24.38	2.9	0 nd	700	8.1	23.1	
0	0	15.61	2 NA	NA	NA	0 nd	0 nd	13.27	1.7	0 nd	650	8.1	22.9	
22.7	2.7	26.9	3.2 NA	NA	NA	0 nd	0 nd	19.34	2.3	0	0	700	8.1	23
0	0	12.49	1.6 NA	NA	NA	0 nd	0 nd	11.71	1.5	0	0	650	8.1	19.3
0	0	109.29	13 NA	NA	NA	0 nd	0 nd	13.45	1.6	0 nd	700	8.1	22.8	
na	na	na	na	na	na	na	na	na	na	na	na	650		
na	na	na	na	na	na	na	na	na	na	na	na	700		
0 nd	7.21	1	0 nd			0 nd	0 nd	0 nd	0 nd	0 nd	600	7.7	17.8	
0 nd	156.12	10	0 nd			0 nd	0 nd	26.54	1.7	0 nd	1300	8.1	20.6	
0 nd	34.35	5.9	0 nd			0 nd	0 nd	0 nd	0 nd	0 nd	7000	7.6	16.4	

10.51	5.6	0 nd	0 nd	0 nd	0 nd	0 nd	0 nd	2.25	1.2	0 nd	3000	7.5	16.2+AAE9 AE31		
BOD mass	BOD conc	TSS mass	TSS conc	Fecal mass	Fecal conc	TRC mass	TRC conc	Oil and GrnOil and Grn	COD mass	COD conc	TOC mass	TOC conc	Ammonia	Ammonia	Discharge pH
4.4375	1.528571	51.04	5.773684	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	14.1725	1.7	0.122	0.096667	8.03	#DIV/0!
0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	21.26
31.1	3.7	317.05	33	0	0	0	0	0	0	0	26.54	2.9	2.44	0.29	8.1

The Dalles	Information needed	Any monitoring data or info on Outfalls 4 -32; Xl spreadsheets with monitoring data; (check out info on other operations e.g. fish ladders)		
WA0026701	Summary: Level of difficulty: Violations:	3d outfalls grouped in sumps non-contact cooling water average-high pH violations for outfalls 18 - 31	Conversion gpm to MGD	0.00144
	Background	TOC (2.1 mg/L)	BOD TSS COD Ammonia Oil and grease PCB - ND	
Agency	Contact	Outfall #	Outfall description	Pollutants Detected
				Notes
USACE Portland	Ken Duncan	1 Unwatering sump	COD TOC TSS oil and grease	believed to have oil and grease in 2008; no o/l and grease detected in 2015; water from expansion joints; draft tube drains diffusion drains; fish transportation channel drain; auxillary water conduit drain; station service
		2 Drainage sump	COD TOC TSS oil and grease	combined believed to have oil and grease no o/l and grease detected in 2015; intake from river
		3 MU 1&2 Non-Contact Cooling Water	COD TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		4 MU 3&4 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		5 MU 5&6 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		6 MU 7&8 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		7 MU 9&10 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		8 MU 11&12 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		9 MU 13&14 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		10 MU 15&16 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		11 MU 17&18 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		12 MU 19&20 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		13 MU 21&22 Non-Contact Cooling Water	TOC TSS	not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		14 Fish Units 1 &2 Cooling Water	TOC TSS	find out more about operations collecting in spillway; not believed to have oil and grease no oil and grease detected in 2015; intake from river
		15 South Spill way Sump	TOC TSS	find out more about operations collecting in spillway; not believed to have oil and grease no oil and grease detected in 2015; water from uplift drains; expansion joints
		16 North Spillway Sump	TOC TSS	drainage find out more about operations collecting in spillway; not believed to have oil and grease no oil and grease detected in 2015; water from uplift drains; expansion joints
		17 Navigation Lock Drainage Sump	TOC TSS	drainage find out more on nav locks; not believed to have oil and grease no oil and grease detected in 2015; water from floor drains expansion joints
		18 Transformer Cooling Water #1	TOC TSS	drainage not believed to have oil and grease no oil and grease detected in 2015; intake from river
		19 Transformer Cooling Water #2	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		20 Transformer Cooling Water #3	TOC	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		21 Transformer Cooling Water #4	COD TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		22 Transformer Cooling Water #5	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		23 Transformer Cooling Water #6	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		24 Transformer Cooling Water #7	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		25 Transformer Cooling Water #8	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		26 Transformer Cooling Water #9	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		27 Transformer Cooling Water #10	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		28 Transformer Cooling Water #11	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		29 Transformer Cooling Water #12	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		30 Transformer Cooling Water #13	TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; intake from river
		31 Transformer Cooling Water #14	BOD TOC TSS	exceedance of pH to 8.9 not believed to have oil and grease no o/l and grease detected in 2015; why is there BOD in outfall?; intake from river
32 Station Service 01 & 02 Cooling Water		COD TOC Ammonia	no oil and grease measured; intake from river - Cooling water for the station service turbines (upper guide and lower thrust and air coolers) and discharges to the draft tube	cooling water similar to fish units - use to power own needs or generate very small discharges located in powerhouse for non-contact cooling water; much smaller than MU transformers but function in the same way will not be removed
33 Transformer T04 Cooling Water	TOC	no oil and grease measured; intake from river	cooling water	0.2088
34 Transformer T01 Cooling Water	TOC	no oil and grease measured; intake from river	cooling water	0.1728
35 Auxiliary Water Pump			drainage EAUs for tracking oil use and switching over to EAUs for Kaplan Runner wicket gate t	0.072
average min max			Sum of max flows for cooling water	53.1216

influent	Temp	pH	BOD	TSS conc	COD	TOC	Ammonia	Oil/Grease/PCB	
	9	7.83	ND	nd	ND	2.1	nd	nd	na
BOD	COD	TOC	TSS	Ammonia	Flow	Temp(winter)	Temp(summer)	pH (min) pH (max)	temp (C, sinter)
ND	0	1.72	2.5 ND		6250	60		6.5 8.5	15.55556
ND	0	1.28	1.5 ND		1000	66		6.5 8.5	18.88889
ND	0	1.73	3 ND		1700	68		6.5 8.5	20
ND	ND	2.06	6.5 ND		1700	66		6.5 8.5	18.88889
ND	ND	1.8	3.5 ND		1700	67		6.5 8.5	19.44444
ND	ND	1.52	3.5 ND		1700	66		6.5 8.5	18.88889
ND	ND	1.59	3.5 ND		1700	67		6.5 8.5	19.44444
ND	ND	1.7	5.5 ND		1700	66		6.5 8.5	18.88889
ND	ND	1.63	3.5 ND		1700	65		6.5 8.5	18.33333
ND	ND	1.64	4.5 ND		1700	66		6.5 8.5	18.88889
ND	ND	1.39	24 ND		1700	68		6.5 8.5	20
ND	ND	1.32	9.5 ND		1700	68		6.5 8.5	20
ND	ND	1.2	5.5 ND		1700	67		6.5 8.5	19.44444
ND	ND	1.46	3 ND		05	67		6.5 8.5	19.44444
ND	ND	1.08	0.5 ND		25	60		6.5 8.5	15.55556
ND	ND	1.17	5.5 ND		5	66		6.5 8.5	18.88889
ND	ND	1.16	1 ND		1	67		6.5 8.5	19.44444
ND	ND	2.7	4 ND		100	54		6.5 8.9	12.22222
ND	ND	2.5	6 ND		100	53		6.8 8.9	11.66667
ND	ND	2.3 ND	ND		100	53		6.8 8.9	11.66667
ND	220	1.8	4 ND		100	73		6.8 8.9	22.77778
ND	ND	2.2	2 ND		100	54		6.8 8.9	12.22222
ND	ND	2.3	6 ND		100	54		6.8 8.9	12.22222
ND	ND	2	2 ND		100	55		6.8 8.9	12.77778
ND	ND	2.4	2 ND		100	55		6.8 8.9	12.77778
ND	ND	2.1	4 ND		100	54		6.8 8.9	12.22222
ND	ND	2.2	8 ND		100	54		6.8 8.9	12.22222
ND	ND	2.1	10 ND		100	54		6.8 8.9	12.22222
ND	ND	2.1	8 ND		100	53		6.8 8.9	11.66667
ND	ND	2	8 ND		100	53		6.8 8.9	11.66667
3.1 ND	2.3	8 ND			100	53		6.8 8.9	11.66667

BOD conc	TSS mass	TSS conc	Fecal mass/Fecal conc	TRC mass	TRC conc	Oil and GreasOil and Grn	COD mass	COD conc	TOC mass	TOC conc	Ammonia	Ammonia	Discharge	pH	Winter	Summer	T	Summer	Temp
nd	0	nd	na	na	na	na	0	nd	13.21	11	1.92	1.6	0.38	0.32	145	7.32	12.8		
0 nd	0	nd	na	na	na	na	0	nd	0 nd	1.2	1.01	0 nd	120	7.83	13.4				
0 nd	0	nd	na	na	na	na	0	nd	0 nd	1.1	0.92	0 nd	120	7.61	17.3				

BOD	COD	TOC	TSS	Ammonia	Temperature (winter)
average	3.1	52.2	1.764118	5.283333	0.32 15.98529
minimum	3.1	0	0.92	0.5	0.32 11.66667
max	3.1	220	2.7	24	0.32 17.3

<b>John Day</b>	Need more info on:	any XL spreadsheet with more pollutant info			
WA0026832	Background	TSS (10 mg/l) TOC (1.7 mg/l) Ammonia (0.12 mg/l) temp 22.9C pH (7.6); BOD COD O1 and Grease PCB - ND			
	Generally speaking:	10 outfalls with <b>no fish tank discharges</b> 33 outfalls in OR 10 outfalls in WA no DEQ permit sump col ling water nav locks easier			
	Summary:	no pH violations			
	Level of difficulty:	easier			
	Level of information:	average			
Agency	Contact	Outfall # Outfall description	Pollutants Detected	Notes	ID permit effluent category
USACE Portland	Ken Duncan	18 Main Unit (MU) 15 Non-contact cooling w ND for oil and grease		Discharge water from MU Turbines 15 and 16 can be considered to have the same composition. Unit 15 was sampled for temperature pH and oil/grease. Unit 16 was sampled for the complete set of permit parameters.	cooling water
		19 MU 16 Non-contact Cooling Water	TSS TOC Ammonia	Discharge water from MU Turbines 15 and 16 can be considered to have the same composition. Unit 15 was sampled for temperature pH and oil/grease. Unit 16 was sampled for the complete set of permit parameters.	cooling water
		20 Unwatering Sump Pump 3	TSS TOC	Pump runs intermittently; however run time data is not available for calculating accurate average daily values; unwatering sump discharge wastewater originates from expansion joints draft tube drains and diffusion drains	equipment and floor drain water maintenance related water maintenance-related water during flood/high water events; combined with cooling water from machinery
		21 Unwatering Sump Pump 4	unable to sample		equipment and floor drain water maintenance related water maintenance-related water during flood/high water events; combined with cooling water from associated machinery
		23 Central Non-Overflow (CNO) Pumps 9	10TOC	Three overflow pumps (Pumps 9-11) discharge into one outfall. Pumps run intermittently; however run time data is not available for calculating accurate average daily values	cooling water also drains skeleton bays
24 and 25 in Corps outfall list					line up with outfalls 15 and 16 at the Dalles - draining a gallery under spillway
		26 Spillway Drainage Sump Pumps 8 8A	TOC	Two pumps remove water from grout gallery. Pumps run intermittently; however run time data is not available for calculating accurate average daily values.	equipment and floor drain water maintenance related water maintenance-related water during flood/high water events;
		27 Nav Lock F1 Valve Tainter 4	no water at time of sampling	Pump operates two days per year for drainage of secondary containment. Nav lock drains sum 3 discharge wastewater originates in the fish pump pits and drain valves (tainter valves) 1 and 2	equipment and floor drain water maintenance related water maintenance-related water during flood/high water events
		28 Nav Lock Drainage Sump 3	BOD TSS TOC		equipment and floor drain water maintenance related water maintenance-related water during flood/high water events
		29 Nav Lock Pump 4	TOC ammonia	discharge water originates from upf1 drains and expansion joints Pump runs intermittently; however run time data is not available for calculating accurate average daily values	equipment and floor drain water maintenance related water maintenance-related water during flood/high water events
		43 Powerhouse HVAC Cooling Water	TSS TOC		drain drainage water
					drain drainage water
		oil-lubricated pumps -			confirm that no oil in cooling water
					sum of cooling water

		Max Daily Values and Average daily values are identical																			
		Temp	pH	BOD	TSS	COD	TOC	Ammonia	Oil/Grease	PCB											
influent		22.9	7.6 ND	ND	10 ND	1.7	0.12	ND	ND												
Max flows											1.7	0.2									
2.16		NA	NA	NA	NA	NA	NA	NA	NA	nd	NA	NA	NA	NA	NA	NA	NA	1500	7.9	24.2	
2.16		0 nd		30.62		1.7 NA		NA	NA	NA	0 nd		0 nd		30.62	1.7	2.16	0.12	1500	7.9	23.8
14.4		0 nd		288.23		2.4 NA		NA		0 nd		0 nd		0 nd		216.17	1.8	0 nd	8800	7.6	18.7
14.4		NA	NA	NA	NA	NA	NA	NA	NA	nd	NA	NA	NA	NA	NA	NA	NA	NA	8800		
3.6 3.6 3.6		0 nd		0 nd		NA		NA	NA	NA	nd	NA	NA	36.03	1.2	0 nd	2500	7.4	20.6		
		0 nd		0 nd		NA		NA	NA	NA	nd	NA	NA	9.91	1.1	0 nd	750	7.8	18.3		
2.16		NA	NA	NA	NA	NA	NA	NA	NA	nd	NA	NA	NA	NA	NA	NA	NA	NA	1500		
4.32		198.16	5.5	43.23	1.2 NA	NA	NA	NA		0 nd		0 nd		93.67	2.6	0 nd	3000	7.6	18.7		
0.216		0 nd		0 nd		NA		NA	NA	0 nd		0 nd		2.16	1.2	0.54	0.3	150	7.5	17.3	
0.1728		0 nd		8.5	5.9 NA	NA	NA	NA		1 nd		1 nd		2.45	1.7	0 nd	120/pump	7.9	23.6		
4.4928 average		28.30857	5.5	52.94	2.8 na	na	0 na	0 na	0.2 na	0.2 na	55.85857	1.614286	0.385714	0.21	7.7	#DIV/0!	20.65				
min		0	5.5	0	1.2	0	0	0	0	0	0	0	0	0	0	0	7.4	0	17.3		
max		198.16	5.5	288.23	5.9	0	0	0	0	1	0	1	0	216.17	2.6	2.16	0.3	7.9	0	24.2	

McNary

WA0026824

application states that 1 measurement taken but there are different values for max and average daily values

influent not measured

max ave daily max daily ave daily

BOD mass BOD conc BOD mass BOD conc TSS mass TSS conc TSS mass TSS conc Fecal mass Fecal conc TRC mass TRC conc

Agency Contact Outfall #

USACE, Walla Walla District Don Redman 21 7.6 2.1 2.6 2.1 21.6 6 7.2 6 NA NA 0 <0.05

22 15.1 4.2 5 4.2 3.6 1 1.2 1 NA NA 0 <0.05  
BOD mass BOD conc BOD mass BOD conc TSS mass TSS conc TSS mass TSS conc Fecal mass Fecal conc TRC mass TRC conc  
average 11.35 3.15 3.8 3.15 12.6 3.5 4.2 3.5 #DIV/0! #DIV/0! 0 #DIV/0!  
min 7.6 2.1 2.6 2.1 3.6 1 1.2 1 0 0 0 0  
max 15.1 4.2 5 4.2 21.6 6 7.2 6 0 0 0 0

max daily Oil and Gr	ave daily Oil and Gr	max daily Oil and Gr	ave daily Oil and Gr	max daily COD mass	COD conc	COD mass	COD conc	TOC mass	TOC conc	TOC mass	TOC conc	Ammonia	Ammonia	Ammonia	Ammonia	Discharge	pH	Winter tenSummer Temp
-------------------------	-------------------------	-------------------------	-------------------------	-----------------------	----------	----------	----------	----------	----------	----------	----------	---------	---------	---------	---------	-----------	----	-----------------------

0 <1	0 <1	25.8	7.16	8.6	7.16	6.02	1.67	6.02	1.67	0.27	0.0745	0	0.0745	300	7.5-8.5	19.1
------	------	------	------	-----	------	------	------	------	------	------	--------	---	--------	-----	---------	------

4 Oil and Gr	1.1 Oil and Gr	1.3 Oil and Gr	1.1 Oil and Gr	0 <5 mg/L	0 <5 mg/L	9.94	2.76	3.32	2.76	0.271	0.074	0	0.074	300	20.3 Winter tenSummer Temp		
2	1.1	0.65	1.1	12.9	7.16	4.3	7.16	7.98	2.215	4.67	2.215	0.2705	0.07425	0	0.07425	300	19.7
0	1.1	0	1.1	0	7.16	0	7.16	6.02	1.67	3.32	1.67	0.27	0.074	0	0.074	300	19.1
4	1.1	1.3	1.1	25.8	7.16	8.6	7.16	9.94	2.76	6.02	2.76	0.271	0.0745	0	0.0745	300	20.3

<b>Ice Harbor</b> WA0026816	Need info on	Verify routing of water, navigation locks, no anesthetizing pools, commingled discharges; XL spreadsheet with data, fish ladder, locks, outfalls 11-13,			
	Summary	21 outfalls grouped in sumps, non-contact cooling water; fish ladder (verify with Courtney), locks, fish pumphouse, Commingled water?, Nav Locks average-high			
	Level of difficulty				
Agency	Contact	Outfall #	Outfall description	Pollutants Detected	Notes
USACE, Walla Walla	Don Redman		Navigation lock sump 3 tainter valve 1 #1 Drainage Sump discharge	TSS, TOC	This pump takes a suction from the Tainter Valve #1 drainage sump. The Tainter #1 drainage sump receives input from the Tainter Valve #1 Drain Valve and the Nav Lock downstream gate north counterweight pit drain. The discharge is intermittent because the pump is on a float switch and only operates when the sump level is high enough to pump down.
			Nav Lock Pump 4 North Fish 2 Pumphouse Unwaterins sump discharge	BOD, TSS, TRC, Oil and grease, COD, TOC	This pump takes suction fro the N. Fish Pumphouse Unwatering Sump, which receives from two sources the Unwatering Header and various Floor Drains. This unwatering header receives input from the pumphouse discharge channel and the wet pits. The Floor Drains receive input from various gland water, expansion joints, any leaking pipes and a bubbler at the end of the potable water line that provides a small amount of flow for residual chlorine levels. The discharge is intermittent because the pump is on a float switch and only operates when the sump level is high enough to pump down.
			Nav Lock Pump 8 North Non-Overflow 3 Drainage Sump Discharge	TSS, TOC	This pump takes a suction from the North Non-overflow drainage sump which receives input from Nav Lock/Spillway drainage and grout gallery header and two deck drains. The discharge is intermittent b/c the pump is on a float switch and only operates when the sump level is high enough to pump down. Ave operations time is 4.6 hours at 500 gpm.
			Pump 9 South fish pumphouse 4 unwatering sump discharge	TSS, TOC	This pump takes a suction from the South Fish Pumphouse unwatering sump which receives input from two sources the unwatering header and various floor drains. Mphou se Discharge Channel and Wet Pits. The Floor Drains receive input from pump gland cooling water, expansion joints and the leaking pipes. The discharge is intermittent because the pump is on a float switch and only operates when the sump level is high enough to pump down. Intermittent discharge because cooling water is secured while the main unit is shut down; Discharges from 6, 8, 10 are the same; Usually run MU1 that attracts fish ladder; 2 fish allders; other units may not need to be run in the summertime.
			MU 1 Air Cooler non-contact cooling 5 water	TSS, TOC	
			MU1 Thrust bearing non-contact cooling		Discharges from 5, 7, 9 are the same
			6 water	TSS, TOC	
			MU2 Air Cooler non-contact cooling	no info, but operator believes discharges from	
			7 water	5,7,9 are the same	
			MU2 Thrust bearing non-contact cooling	no info but operator believes similar to	
			8 water	discharges from outfalls 6,8, and 10 are the same	
			MU3 Air Cooler non-contact cooling	no info, but operator believes discharges from	
			9 water	5,7,9 are the same	
			MU3 Thrust bearing non-contact cooling	no info but operator believes similar to	
			10 water	discharges from outfalls 6,8, and 10 are the same	
			11 MU4 Non-contact cooling water	no info but operator believes similar to	no info intermittent discharge
			12 MUS Non-contact cooling water	discharges from outfalls 11-13 are the same	no info intermittent discharge
			13 MU6 Non-contact cooling water	no info but operator believes similar to	no info intermittent discharge
			Combined Drainage and unwater sump	discharges from outfalls 11-13 are the same	Includes discharge from 3 drainage sump pumps and/or 2 unwatering sump pumps.. The three drainage sump pumps take a suction from the Powerhouse Drainage Sump, which receives input from Service bay under drains, erection bay under drains, erection bay drainage header, powerhouse drainage and grout gallery header, and MU headcover pumps. The two unwatering sump pumps take a suction from the Powerhouse Unwatering Sump, which receives input from unit draft tub drain valves, fishway supply conduit drains and the fish transportation channel drains. These sums are ie cross-connected at the 270' above sea level point. Intermittent because pumps are on a float and only operate to maintain level in the normally controls bnd; high discharges
			14 discharge	TSS, oil and grease, TOC	continuous flow through, no anesthetizing pools heat pumps
			15 HVAC discharge	BOD, TSS, COD, TOC	continuous flow through
			16 Transformer Cool 1-1	TSS, TOC, Ammonia	continuous flow through
			17 Transformer Cool 1-2	TSS, TOC	continuous flow through
			18 Transformer Cool 2-1	no info, but operator believes discharges from 16-21 are similar	continuous flow through
			19 Transformer Cool 2-2	no info, but operator believes discharges from 16-21 are similar	continuous flow through
			20 Transformer Cool 3-1	no info, but operator believes discharges from 16-21 are similar	continuous flow through
			21 Transformer Cool 3-2	no info, but operator believes discharges from 16-21 are similar	continuous flow through

average  
min  
max

influent not measured  
 max ave daily max daily ave daily max daily ave daily max daily ave daily max daily  
 BOD mass BOD conc BOD mass BOD conc TSS mass TSS conc TSS mass TSS conc Fecal mas: Fecal conc TRC mass TRC conc TRC mass TRC conc Oil and Gr COD mass COD conc COD mass COD conc TOC mass TOC conc

0 <2            0 <2            102.71        5.7        4.9        5.7 NA        NA            0 <0.05        0 <0.05        0 <1            0 <1        0 <10            0 <10        30.6        1.7

177.31 9.84 8.53 9.84 153.11 8.5 7.4 8.5 NA NA 1.03 0.057 0.05 0.057 0.05 0.057 79.3 4.4 3.8 4.4 3.8 4.4 122.51 6.8

0 <2                    0 <2                    18                    3                    3.5                    3 NA                    NA                    0 <0.05                    0 <0.05                    0 <1                    0 <1                    0 <10                    0 <10                    9                    1.5

0 <2 0 <2 180.1 10 8.7 10 NA NA 0 <0.05 0 <0.05 0 <1 0 <1 0 <10 0 <10 28.8 1.6

0 <2            0 <2            49            3.4            49            3.4 NA            NA            0 <0.05            0 <0.05            0 <1            0 <1            0 <10            0 <10            30.3            2.1

0 <2 0 <2 7.1 4.9 7.1 4.9 NA NA 0 <0.05 0 <0.05 0 <1 0 <1 0 <10 0 <10 3 2.1

$0 < 2$        $0 < 2$       378.3      3      101.3      3 NA      NA      0 <0.05      0 <0.05      51      4.1      138.5      4.1      0 <10      0 <10      214.4

0 <2 0 <2 6.2 2.6 6.2 2.6 NA NA 0 <0.05 0 <0.05 0 <1 0 <1 0 <10 0 <10 5.8 2.4

Digitized by srujanika@gmail.com

26.361 8.07 9.483 8.07 110.632 5.89 39.99 5.89 #DIV/0! #DIV/0! 0.103 0.057 0.005 0.057 51.705 2.0785 21.78 4.25 26.391 11.7 26.391 11.7 50.861 2.64

177.31 9.84 86.3 9.84 378.3 15 205.4 15 0 0 1.03 0.057 0.05 0.057 517 4.1 138.5 4.4 260.11 19 260.11 19 214.4 6.8

ave daily max daily ave daily 0.2  
 TOC mass TOC conc Ammonia Ammonia Ammonia Ammonia Discharge pH Winter ter Summer Temp

1.4 1.7 0 <0.03 0 <0.03 1500 7.5-8.5 22.2

22.6 6.8 0 <0.03 0 <0.03 1500 7.0-8.0 14.8

1.7 1.5 0 <0.03 0 <0.03 500 7.5-8.5 19.4

1.4 1.6 0 <0.03 0 <0.03 1500 7.5-8.5 20.9

30.3 2.1 0.69 0.048 0.69 0.048 1200 7.0 - 8.0 24.2

3 2.1 0.06 0.043 0.06 0.043 120 7.0-8.0 26.1

NA NA NA NA NA NA 1200

NA NA NA NA NA NA 120

NA NA NA NA NA NA 1200

NA NA NA NA NA NA 120

NA NA NA NA NA NA 1950

NA NA NA NA NA NA 1950

NA NA NA NA NA NA 1950

57.4 1.7 0 <0.03 0 <0.03 10500 7.0 - 8.0 17.9  
 58.9 4.3 0 <0.03 0 <0.03 1140 7.0 - 8.0  
 5.3 2.2 0.08 0.032 0.08 0.032 200 7.5-8.5 21.3  
 5.8 2.4 0 <0.03 0 <0.03 200 7.5 - 8.5 24.2

NA NA NA NA NA NA 200

TOC mass TOC conc Ammonia Ammonia Ammonia Ammonia Discharge pH Winter ter Summer Temp

18.78 2.64 0.083 0.041 0.083 0.041 1316.667 21.2222  
 1.4 1.5 0 0.032 0 0.032 120 14.8  
 58.9 6.8 0.69 0.048 0.69 0.048 10500 26.1

Lowe Monumental WA0026808	Need mo e info on La gest values	XL sp eadsheet w th data quest ons on outfall 11 - n appl cat on say that d sump may go to d a nage sump, and the e a e two outfalls 11a one each to a t anfome un t f sh hold ng tanks fo BOD 13 outfalls g ouped nsuon, non- contact cooling wate , anesthetizing tanks ave age	XL sp eadsheet w th data quest ons on outfall 11 - n appl cat on say that d sump may go to d a nage sump, and the e a e two outfalls 11a one each to a t anfome un t f sh hold ng tanks fo BOD 13 outfalls g ouped nsuon, non- contact cooling wate , anesthetizing tanks ave age
Agency USACE, Walla Walla	Contact Don Redman	Outfall # 1 d a nage sump	Outfall descrip on Pollutants Detected TSS, COD, TOC
			Notes
			comb ned w th cool ng leakage and nte m tently un d a nage and unwater ng class fy s same d scha ge comb ned w th cool ng
	2 unwater ng sump	TSS, TOC	equa ly collects ext a water f on d a nage sump ave flow n w nte uns mte in therly uns cont nusuly in sume and w nte and nre m tently n sp ng and fall Cool ng wate fo the end of d esel gene ato s only ave flow when n water ng. Runn d sh evry month 15- 20 m in fo planned maintenance schedule. D esel gene ato uns fo about 2 hou s/yea . If the e s powe eme geny, d esel gene ato can be un fo longe pe ods.
	3 heat pump	BOD, TSS, COD, TOC	non-contact cool ng wate comes f om f sh penstocks
	4 eme geny d esel gene ato cool ng d TSS, o l and g ease, TOC, ammon a		cool ng a l un ts have sc oil case
	5 gene ato cool ng wate un t 1	no info but s m la d scha ges f om outfalls 5-10	Cool ng wate only d scha ged when ope at ng cool ng
	6 gene ato cool ng wate un t 2	no info but s m la d scha ges f om outfalls 5-11	Cool ng wate only d scha ged when ope at ng cool ng
	7 gene ato cool ng wate un t 3	TSS, TOC	Cool ng wate only d scha ged when ope at ng cool ng
	8 gene ato cool ng wate un t 4	no info but s m la d scha ges f om outfalls 5-10	Cool ng wate only d scha ged when ope at ng cool ng
	9 gene ato cool ng wate un t 5	no info but s m la d scha ges f om outfalls 5-10	Cool ng wate only d scha ged when ope at ng cool ng
	10 gene ato cool ng wate un t 6	no info but s m la d scha ges f om outfalls 5-10	Cool ng wate only d scha ged when ope at ng cool ng
11b	11 T anfome ta h wate d scha ge (01) TSS, TRC, o l and g ease, TOC T anfome ta h wate d scha ge (02)		Unclear f om appl cat on whether th s s ll ope at onal o all d scha ges go to d a nage sump when le f sh passage h gh BOD (30 mg/l). On days when f sh sampl ng occu s, tank s d a ned into ve daly. Sampl ng occu s, tank s d a ned into ve daly. Aug 16, and eve y other day n Ap l, eve y day May 1- 22, 2011, and eve y other day Aug 18-Oct 1. MS- 222 d sh passage low BOD (n ap cat on T eatd wate s pleased ave age 15x/day when f sh sampl ng occu s. Sampl ng s eve y other day n Ap l, eve y day May 1- Aug 16 and eve y other day Aug 18-Oct 1. D scha ge conta ns MS-222.
	12 Anesthet z ng tanks	BOD, TSS, COD, TOC, ammon a	ntc nol t anfome no way to sample 102 and 11a to sample flag fo DMR 11a and 11b
	13 Hold ng tanks	TSS, COD, TOC, Ammon a	no sampl ng fo nav lock

influent not measured		max												0.2												Wtne	terSumme	Temp									
BOD mass	BOD conc	BOD mass	BOD conc	TSS mass	TSS conc	TSS mass	TSS conc	Fecal mass	Fecal conc	TRC mass	TRC conc	max da ly	ave da ly	Ammonia	Ammonia	Ammonia	Discharge	pH	Wtne	terSumme	Temp																
0 2		67.25	2.8	62.35	3.8	NA	NA	0 0.05	0 0.05	0 1	0 1	202	8.41	187.31	8.41	51.88	2.16	48.1	2.16	0 0.03	0 0.03	2000	7.0-8.0		20.1												
0 2	288.21	3.2	161.71	3.2	161.71	3.2 NA	NA	0 0.05	0 0.05	0 1	0 1	0 10	0 10	144.11	1.6	81.9	1.6	0 0.03	0 0.03	7500	7.0-8.0		16.7														
42	2.8	42	2.8	1111	74	1111	74 NA	NA	0 0.05	0 0.05	0 1	0 1	420.31	28	420.31	28	42	2.8	42	2.8	0 0.03	0 0.03	1250	7.0-8.0		20.7											
0 2	0 2	23 2	4.3	0.03	4.3 NA	NA	0 0.05	0 0.05	7	1.3	0.01	1.3	0 10	0 10	9.7	1.8	0.01	1.8	0.2	0.035	0 0.035	450	8.0-9.0		23												
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1500											
NA	0 2	108.11	6	108.11	6	NA	NA	0 0.05	0 0.05	0 1	0 1	0 10	0 10	43.2	2.4	43.2	2.4	0 0.03	0 0.03	1500	8.0-9.0		21.6														
NA	0 2	432	3	432	3	NA	NA	0 0.05	0 0.05	0 1	0 1	0 10	0 10	37.5	2.6	37.5	2.6	0 0.03	0 0.03	1200	8.0-9.0		21.3														
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1200											
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1200											
0 2	0 2	13	6.2	1.3	6.2 NA	NA	0 0.05	0 0.05	0 1	0 1	0 1	0 1	0 10	0 10	0.4	1.9	0.4	1.9	0 0.03	0 0.03	18	7.0-8.0		20.3													
0 2	0 2	11	5.1	1.1	5.1 NA	NA	0.02	0.072	0 0.02	0.072	0.3	1.2	0.3	1.2	0 10	0 10	0.5	2.2	0.5	2.2	0 0.03	0 0.03	18	7.0-8.0		18.4											
0.24	29.6	0.24	29.6	0.04	5.5	0.04	5.5 NA	NA	0 0.05	0 0.05	0 1	0 1	0.49	71	0.49	71	0.16	24	0.16	24	0.00031	0.038	0.0003	0.038	0.57 gpm	7.42		19.2									
0 2	0 2	0.02	3.6	0.02	3.6 NA	NA	0 0.05	0 0.05	0 1	0 1	0 2	0 2	24	0.2	24	0.03	5.3	0.03	5.3	0.0002	0.031	0.0002	0.031	0.52gpm	7.0-8.0		17.6										
max		BOD mass												ave da ly												0.2	Wtne	terSumme	Temp								
ave age	m n num	4.21	16.2	33.045	11.86605	693	11.57	148.886	11.37	147.01	0.003	0.072	0.003	0.072	0.12	0.031	1.2	1.2	0.2	0.2	0.0001	0.020001	0.00005	0.034667	1611.33	7.42	19.85										
max num	42	2.8	288.21	29.6	1111	74	1111	74	0	0	0.02	0.02	0	0	0.072	0	0.072	0	1.2	0	1.2	0	8.41	0	8.41	0.03	1.6	0.01	1.6	0 0.031	18	7.42	0	16.7			
min num	42	2.8	288.21	29.6	1111	74	1111	74	0	0	0.02	0.02	0.02	0.02	0.072	0	0.072	7	1.3	0.3	1.3	420.31	71	420.31	71	144.11	24	81.9	24	0.2	0.038	0.0003	0.038	7500	7.42	0	23

Little Goose WA0026786	Need info on: Most significant discharges from locks	Temp	pH	BOD	TSS mass	COD	TOC	Ammonia	Oil/Greas/PCB					
	Summary:	influent		18.2	8.04	6.2	6	12.7	3.48 0.056 1.8 ND					
	Level of difficulty:													
	Background pollutants detected:	max	ave daily	max daily	ave daily									
Agency	Contact	Outfall #	Outfall description	BOD mass	BOD conc	BOD mass	TSS mass	TSS conc	Fecal mas:Fecal conc	TRC mass	TRC conc	TRC mass	TRC conc	
USACE Walla Walla	Don Redman	1 drainage sump		0 <2	0 <2	28.82	2	21.35	2 NA	NA	0 <0.05	0 <0.05	no meas	
				no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	
		2 unwatering pump		0 <2	0 <2	109.9	1	47.12	1 NA	NA	0 <0.05	0 <0.05	no meas	
				no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	
		3 heat pump outfall		0 <2	0 <2	7.21	1	3.93	1 NA	NA	0 <0.05	0 <0.05	no meas	
		4 emergency diesel generator cooling water		0 <2	0 <2	0 <2	0 <2	0 <2	NA	NA	0 <0.05	0 <0.05	no meas	
		5 Cooling water discharge unit 1		252.9	10.8	252.9	10.8	445	19	445	19 NA	NA	0 <0.05	
		6 Cooling water discharge unit 2		86.83	3.67	86.63	3.67	23.66	1	23.66	1 NA	NA	0 <0.05	
		7 Cooling water discharge unit 3		no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	
		8 Cooling water discharge unit 4		no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	
		9 Cooling water discharge unit 5		no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	
		10 Cooling water discharge unit 6		no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	no meas	
		11 North shore diesel generator drain		0 <2	0 <2	0.04	2	0.04	2 NA	NA	0 <0.05	0 <0.05	no meas	
				no meas	no meas	no meas	no meas	no meas	no meas	NA	no meas	no meas	no meas	
		12 north shore sump pump #2 drain		0 <2	0 <2	0 <2	0 <2	0 <2	NA	NA	0 <0.05	0 <0.05	no meas	
				no meas	no meas	no meas	no meas	no meas	no meas	NA	no meas	no meas	no meas	
		13 navigation lock fill valve sump		0.43	17.7	0.43	17.7	0.89	37	0.89	37 NA	NA	0.001	
				no meas	no meas	no meas	no meas	no meas	no meas	NA	no meas	no meas	no meas	
		14 visitors center A,C drain		0 <2	0 <2	0 <2	0 <2	0 <2	NA	NA	0.01	0.09	0.01	
				no meas	no meas	no meas	no meas	no meas	no meas	NA	no meas	no meas	no meas	
		15 Navigation lock drainage		284.6	15.8	0.57	15.8	108.11	6	0.22	6 NA	NA	1.41	
				no meas	no meas	no meas	no meas	no meas	no meas	NA	no meas	no meas	no meas	
		16 juvenile fish facility discharge from wet lab		0.03	17.3	0.03	17.3	0	3	0	3 NA	NA	0	
				max	ave daily	max daily	ave daily							
				BOD mass	BOD conc	BOD mass	BOD conc	TSS mass	TSS conc	TSS mass	TSS conc	Fecal mas:Fecal conc	TRC mass	TRC conc
				average	56.79909	13.054	30.96	13.054	63.16455	8.75	47.35091	8.75	#DIV/0!	0.129182
				minimum	0	3.67	0	3.67	0	1	0	1	0	0
				maximum	284.6	17.7	252.9	17.7	445	37	445	37	0	1.41

max daily ave daily max daily ave daily max daily ave daily max daily ave daily  
 Oil and Gr Oil and Gr Oil and Gr COD mass COD conc COD mass COD conc TOC mass TOC conc TOC mass TOC conc Ammonia Ammonia Ammonia Discharge pH Winter to Summer Temp

77.82	5.4	57.65	5.4	89.35	6.2	66.19	6.2	24.21	1.68	17.93	1.68	1.56	0.11	1.15	0.11	1200	7.0-8.0	17.4
33.15	2.3	24.58	2.3	no meas	1200	no meas												

131.9	1.2	56.55	1.2	770.31	7.01	330.31	7.01	189.01	1.72	81.05	1.72	6.46	0.06	2.77	0.06	9150	7.0-8.0	16.5
0 <1.0	0 <1.0	no meas	9150	no meas	no meas													

0 <1	0 <1	75.7	10.5	41.3	10.5	15.42	75.66	8.42	75.66	0.71	0.1	0.39	0.1	600	7.0-8.0	28.3	
0 <1	0 <1	0 <5	0 <5	0 <5	0 <5	0.07	0.21	0.07	0.21	0.04	0.11	0.04	0.11	30	7.0-8.0	28.2	

39.8	1.7	39.8	1.7	594.8	25.4	594.8	25.4	142.2	6.07	142.2	6.07	4.52	0.19	4.52	0.19	1950	7.0-8.0	23.1
39.81	1.7	39.81	1.7	no meas	1950	no meas	no meas											
0 <1	0 <1	262.6	11.1	262.6	11.1	60.57	2.56	60.57	2.56	2.02	0.09	2.02	0.09	1970	7.0-8.0	22.6		

no meas	1690	no meas	no meas														
no meas	1690	no meas	no meas														
no meas	1690	no meas	no meas														
no meas	1690	no meas	no meas														

0.02	1.2	0.02	1.2	0 <5	0 <5	0.01	0.51	0.01	0.51	0	0.08	0	0.08	1.6	7.0-8.0	24.3	
0.02	1.2	0.03	1.4	no meas	1.6	no meas											

8.07	1.2	2.47	1.2	0 <2	0 <2	9.68	1.44	2.96	1.44	0.79	0.12	0.24	0.12	560	8.0-9.0	14.7	
8.07	1.2	0 <1	no meas	560	no meas	no meas											

1.46	60.6	1.46	60.6	2.69	112	2.69	112	0.07	2.83	0.07	2.83	0.001	0.06	0.001	0.06	2	7.0-8.0	16.8
0.07	3.1	0.07	3.1	no meas	2	no meas	no meas											

0.17	1.1	0.09	1.1	0 <5	0 <5	0.18	1.13	0.09	1.13	0.01	0.07	0.01	0.07	13	7.0-8.0	27.6	
0 <1	0 <1	no meas	13	no meas	no meas												

291.6	16.2	0.58	16.2	617.9	34.3	1.24	34.3	115.3	6.4	0.23	6.4	1.26	0.07	4.72	0.07	5600	7.0-8.0	17.3
79.3	4.4	0.16	4.4	no meas	13	no meas	no meas											

0	1	0	1	0.09	56.8	0.09	56.8	0.03	19.3	0.03	19.3	0	0.2	0	0.2	0.125	7.0-8.0	17.7
---	---	---	---	------	------	------	------	------	------	------	------	---	-----	---	-----	-------	---------	------

max daily ave daily max daily ave daily max daily ave daily max daily ave daily  
 Oil and Gr Oil and Gr Oil and Gr COD mass COD conc COD mass COD conc TOC mass TOC conc TOC mass TOC conc Ammonia Ammonia Ammonia Discharge pH Winter to Summer Temp

33.34944	7.369231	7.835556	7.9	211.2809	36.73	112.0936	36.73	48.41273	10.71182	26.88182	10.71182	1.437364	0.104545	1.337364	0.104545	1742.106	#DIV/0!	21.55455
0	1	0	1	0	7.01	0	7.01	0.01	0.21	0.01	0.21	0	0.06	0	0.06	0.125	0	0
291.6	60.6	56.55	60.6	770.31	112	594.8	112	189.01	75.66	142.2	75.66	6.46	0.2	4.72	0.2	9150	0	0

Lower Granite		mon to g data in XL sheet info on Outfalls 11-13 other pollutants	
Agency	Contact	Outfall #	Outfall description
WA0026794		Need mo e info on Back ground	of conce fo adu f i sh t ap, f sh ladder , locks , gat on, anesthetist n ng water TSS, COD, TOC, ammon a, nd f o l and g ease and PCBs h ave low levels of BOD and other pollutants d ffe ent f om othe hyd on
		Gene a ly speak ng	13 outfalls g ouped n sums, non-contact cool ng wate , fish ladder, anesthetizing agents v ry comm ngd water into drainage sum p w th biologcal and/or chemical appes s that are also coagulants, have sepi, comp exco, recirculatg wate , f sh pump cool ng wate goes to d a nage sum p What a f t sh t anspor t on channel d is n?
		Summa y	ave age gh
		Level of d ff culty	Lttle info mat on n outfall desc pt on
		Level of info mat on	
USACE, Walla Walla		Po lutants Detected	
USACE, Walla Walla	Don Redman	1 d a nage sum p	TSS, OI and g ease, COD, TOC, ammon a
		2 unwater ng sum p	TSS, TOC, ammon a
		3 gene ato cool ng wate un t 1	TSS, COD, TOC, ammon a
		3b) gene ency d esel gene ato cool ng	gene ency d esel gene ato cool ng 4 gene ato cool ng wate un t 2 5 gene ato cool ng wate un t 3 6 gene ato cool ng wate un t 4 7 gene ato cool ng wate un t 5 8 gene ato cool ng wate un t 6 9 heat pump non-contact cool ng wate
			BOD, TSS, COD, TOC, ammon a BOD, TSS, COD, TOC, ammon a no info but ope ato bel evess m la to d scha ges f om outfalls 3 and 4 no info but ope ato bel evess m la to d scha ges f om outfalls 3 and 5 no info but ope ato bel evess m la to d scha ges f om outfalls 3 and 6 BOD, TSS, COD, TOC, ammon a
		10 adult f sh t ap d scha ge	BOD, TSS, COD, TOC, ammon a
		11 CND sum p d scha ge (2 pumps w th tw BOD, TSS, OI and g ease, COD, TOC, ammon a	Pumps a e operat on a float atc, pump # 2 down, pump#1 uns on ave age fo . 3 m d a nspor t on channel d is n?
		12 JFF Conex Lab d scha ge	no info
		13 JFF WET Lab D scha ge	BOD, COD, TOC, ammon a
Notes		D a nage sum p - check pe m t app fo all wastewater exams, but t appeara s that a comp esso cool ng wate , gland wate , expans on jo ntis, ga le y d a m, floo d a m, tu b e p l me d a ns, and give no a comp esso d a n go though a nage sum p, d a n wate , jn sepi, comp exco a d alveolatg beh d mme installed - when the a e + HCl detected, the smme automat ca sh ts. Any k t c oated to o f wate sepa abo	
			Includes expans on jo ntis, a ft tube d a ns, d fus on d a ns, f sh t anspor t on channel d a ns, d ft tube d a ns, sc off case d a ns.
			R ve wate r us used to clean gene ency d esel gene ato . On ave age, t is un t 1000 m from the mouth of the river. The smme geny d esel gene ato n nage the non-contact cool ng wate , so we ge to MU #1, outfall 003. The w was not a way to sample 003 w th the combi ned flow so outfalls 003 and 009 we sampled sepa arsty
			h gheat content at ones when adult f sh t ap s n use, constant flow of wate r thugh system pe ocd it, hold tanks w th MU-222 a e d a need tho ths i m
			Pumps a e operat on a float atc, pump # 2 down, pump#1 uns on ave age fo . 3 m d a nspor t on channel d is n?
			assessing the impact of the MU-222 d scha ges when n use.
			Ma ch to Octobe , w th d scha ges I om anesthetiz ng bats fo juven les. Ope ates seasonn on Ma ch-Oct fo -3 h/day conta ns MU-222.
			ave age m n numbr



Grand Coulee	Need info on	XL spreadsheet with data sets; fecal source in ourfalls 2 and 3 14 outfalls, three additional coverage, <b>no fish tanks, fecal detected</b>
WA0026867	Summary Level of difficulty	easier

Agency	Contact	Outfall #	Outfall description	Pollutants Detected	Notes
		1	Pump/Generating Plant Sump	BOD, TRC, TOC, ammonia	The transformers are air cooled. Deluge fire water has only been used during commissioning required by fire flow would be ~1500 gpm. Total of 12 pump and pump-generating unit - each using 1000 gpm cooling water. Operate ~50% of time, biased to summer irrigation season. Drainage discharge is by gravity and indiv pipe subsystems discharge into the inclined portion of the drainage tunnel beyond any safe means of installing a weir to measure total flows. low conc of fecal but detectable; Transformer cooling water flows are regulated to 200 gpm per transformer ban3 transformers/unit and there are 9 Mus. Constant flow. Deluge fire water only used during commissioning if required by fire flow ~750 gpm.
		2	Left Powerhouse Transformer Desk Sump	Fecal, TRC, TOC, ammonia	low conc of fecal but detectable; water leakage into the powerhouse including turbine pit. Two 10000 gpm pumps to discharge the water. Pumps run ~6-7 hrs/day respectively.
		3	Left Powerhouse Sump	Fecal, TRC, TOC	low conc of fecal but detectable; const cooling water flow rate 2500 gpm; used 63% of time
		4a	Left Powerhouse Generator Three (G-3), G-8, Cooling water	Fecal, TRC, TOC, ammonia	
		4b		Fecal, TRC, TOC	
		5	Main Dam Galleries	Fecal, TRC, TOC	The dam is separated in block sections. Block 1 is on the west side of LPH and ending at block 120 at far east of TPP. Block 64 is the east training wall separating spillway from RPH. Seepage and drainage in the main dam at El. 950 and below, collects in three drain-control. Discharge from each pump goes into tailbay, from Block 64 training walls at El. 946.25. All drainage above El. 950 gallery is gravity drained directly through the training walls into the tailway. Flows fluctuate with activity and time of year. Transformer cooling water flows are regulated 200 gpm/transformer bank, 3 transformers/unit. 9 Mus. Flow is constant.
		6	Right Powerhouse Transformer Deck Sump	Fecal, TRC, TOC	Water leakage into powerhouse including turbine pit.
		7	Right Power House Sump	BOD, Fecal, TRC, TOC	constant cooling water flow ~2500 gpm. Units operate 75% of time.
		8	Right Power House G-11, G-16 cooling water	Fecal, TRC, TOC	
		8b		Fecal, TRC, Ammonia	
		9a	Third Power plant transformer deck sump	Fecal, TRC, TOC	
		9b		Fecal, TOC	
		10	Third Power Plant Sump	BOD, Fecal, oil and grease, COD, powerhouse inc turbine pit.	highest levels of fecal (51 mg/L); Water leakage in
		11	Third Power Plant G-19, G-24 Cooling water	Fecal, TRC	
Permittee also seeking coverage fr wicket gates line service units unwatering sump					
oil and grease Check Outfall 4A for similar pollutants permittee considers water from unwatering sump same as influent and unchanged in disch min max average					

No influent data measured

BOD mass	BOD conc	TSS mass	TSS conc	Fecal mass	Fecal conc	TRC mass	TRC conc	Oil and Gr	Oil and Gr	COD mass	COD conc	TOC mass	TOC conc	Ammonia	Ammonia	Discharge	pH	Winter	ter	Summer	Temp
----------	----------	----------	----------	------------	------------	----------	----------	------------	------------	----------	----------	----------	----------	---------	---------	-----------	----	--------	-----	--------	------

4.7	0.032	0 <10	0 <1	0.06	<0	0 <4.3	0	20	2.4	0.017	0.11	0.001	17.39	7.25			17.1
-----	-------	-------	------	------	----	--------	---	----	-----	-------	------	-------	-------	------	--	--	------

0 <2.4	0 <10	2	0.031	0.03	0.004	0 <4.1	0 <20	1.2	0.018	0.19	0.003	7.81	7.52			16.2
--------	-------	---	-------	------	-------	--------	-------	-----	-------	------	-------	------	------	--	--	------

0 <2.4	0 <10	6	0.25	0.06	0.009	0 <4.3	0 <21	1.3	0.054	0 <0.1	2.8	7.66			15.5
--------	-------	---	------	------	-------	--------	-------	-----	-------	--------	-----	------	--	--	------

0 <2.4	0 <10	1	0.033	0.02	0.001	0 <4.3	0 <20	1.3	0.043	0.14	0.005	3.6	7.66			17.5
0 <2.4	0 <10	4	0.133	0.04	0.001	0 <4.3	0 <20	3.4	0.113	0 <0.1	3.6	7.69			17.9	

0 <2.4	0 <10	1	0.343	0.02	0.007	0 <4.3	0 <20	2.2	0.754	0 <0.1	0.35	7.43			11
--------	-------	---	-------	------	-------	--------	-------	-----	-------	--------	------	------	--	--	----

0 <2.4	0 <10	4	0.558	0.04	0.006	0 <4.3	0 <20	1.6	0.223	0 <0.1	0.86	7.57			16.4	
4.6	0.192	0 <10	4	0.167	0.12	0.005	0 <4.3	0 <20	4	0.167	0 <0.1	2.88	7.73			16.6

0 <2.4	0 <10	3	0.1	0.02	0.001	0 <4.3	0 <20	3.5	0.117	0 <0.1	3.6	7.65			17.4
0 <2.4	0 <10	1	0.033	0.05	0.002	0 <4.3	0 <20	0 <1	0.16	0.005	3.6	7.71			15.6
0 <2.4	0 <10	3	0.038	0.01	0	0 <4.3	0 <20	3.3	0.04	0 <0.1	9.36	7.64			13.4
0 <2.4	0 <10	1	0.013	0 <0.1	0	0 <4.3	0 <20	3.3	0.04	0 <0.1	9.36	7.71			13.5

18	30.832	0 <10	30	51.387	0 <0.1	310	531	87	149.024	5.5	9.421	0 <0.1	0.07	6.51		13.4
0 <2.4	0 <10	7	0.081	0.06	0.001	0 <4.3	0 <20	0 <1	0 <0.1	10.37	7.35			17.7		

BOD mass	BOD conc	TSS mass	TSS conc	Fecal mass	Fecal conc	TRC mass	TRC conc	Oil and Gr	Oil and Gr	COD mass	COD conc	TOC mass	TOC conc	Ammonia	Ammonia	Discharge	pH	Winter	ter	Summer	Temp
0	0.032	0	0	0	0.013	0	0	0	531	0	20	0	0.017	0	0.001	0.07	6.51	0	11		
18	30.832	0	0	30	51.387	0.12	0.009	310	531	87	149.024	5.5	9.421	0.19	0.005	17.39	7.73	0	17.9		
1.95	10.352	0	#DIV/0!	4.785714	4.089769	0.037857	0.003364	22.14286	531	6.214286	84.512	2.357143	0.91725	0.042857	0.0035	5.403571	7.505714	#DIV/0!	15.65714		

Name	Affiliation	Email	Phone	Topic
Trevor Conder	NOAA	<a href="mailto:trevor.conder@noaa.gov">trevor.conder@noaa.gov</a>	(503)231-2306; (360)953-3875	ESA consultation for 316(b)
Dave Swank	USFWS	<a href="mailto:david_swank@fws.gov">david_swank@fws.gov</a>	(360)604-2520	ESA consultation for 316(b)
Todd Thorn	Colville Tribes	<a href="mailto:todd.thorn@colvilletribes.com">todd.thorn@colvilletribes.com</a>		Tribal consultation, Grand Coulee
Brian Crossley	Spokane Tribe	<a href="mailto:crossley@spokanetribe.com">crossley@spokanetribe.com</a>		Tribal consultation, Grand Coulee
Lindsay Belonga	Grand Ronde Tribes	<a href="mailto:lindsay.belonga@grandronde.org">lindsay.belonga@grandronde.org</a>		Tribal consultation, Lower Columbia/Snake
Ken Clark	Nez Perce Tribe	<a href="mailto:kenc@knrd.org">kenc@knrd.org</a>		Tribal consultation, Lower Columbia/Snake
Ken Merrill	Kalispel Tribe	<a href="mailto:kmerrill@knrd.org">kmerrill@knrd.org</a>		Tribal consultation, Lower Columbia/Snake
Taylor A	Cowlitz Tribe	<a href="mailto:taylor.a@cowlitz.org">taylor.a@cowlitz.org</a>		Tribal consultation, Lower Columbia/Snake
Mike McKay	Warm Springs Tribe	<a href="mailto:mike.mckay@ctwsbnr.org">mike.mckay@ctwsbnr.org</a>		Tribal consultation, Lower Columbia/Snake
Brent Hall	Umatilla Tribe	<a href="mailto:BrentHall@ctuir.org">BrentHall@ctuir.org</a>		Tribal consultation, Lower Columbia/Snake
Blythe Monoian	Yakama Nation	<a href="mailto:Blythe_Monoian@yakama.com">Blythe_Monoian@yakama.com</a>		Tribal consultation, Lower Columbia/Snake
Wil Badonie	Yakama Nation	<a href="mailto:wil_badonie@yakama.com">wil_badonie@yakama.com</a>		Tribal consultation, Lower Columbia/Snake
Dianne Barton	CRITFC	<a href="mailto:bard@critfc.org">bard@critfc.org</a>	(503)731-1259; (503)238-0667	Tribal consultation
Keith Kutchins	Upper Columbia United Tribes	<a href="mailto:keith@ucut-nsn.org">keith@ucut-nsn.org</a>	(509)209-2411	Tribal consultation
Scott Hauser	Upper Snake River Tribes Foundation	<a href="mailto:scott.hasuer.usrt@gmail.com">scott.hasuer.usrt@gmail.com</a>	(208)331-7880	Tribal consultation
Jeff DeWinkler	BOR			Grand Coulee
Bryan Horsburgh	BOR			Grand Coulee
Ken Duncan	USACE			Lower Columbia - McNary
Don Redman	USACE			Lower Snake + McNary
Ritchie Graves	NOAA			ESA consultation for operations
Beth Moore	ODEQ			Lower Columbia - d/s state
Ellie Key	Washington Dept. of Ecology			401 certs
Mary Lou Soscia	EPA			Federal Caucus and tribal coordination
Laurie Mann	EPA			Columbia River Temperature TMDL
John Palmer	EPA			ESA consultation help
Sean Ramach	EPA			316(b) help
Martin Merz	EPA			QA/QC help